Editorial

Seed sector development in Amhara Region

With this our 7th issue of the LSB newsletter but only the first in this calendar year, we would like to start by wishing all our readers success in 2011. We foresee many exciting developments and activities ahead, starting with the regional workshops this month. Gaining continued experience in the field of seed sector development, our colleagues and partners have interesting reports from 2010 to share with us, including; private sector investment, strengthening regional partnerships, new innovation sites, research results, boosting crop production, successful clustering strategies, internal quality control and short-course participation in the Netherlands. Sharing such useful information can only improve our planning for 2011. The current issue has been compiled by Tadesse Dessalegn, Demeke Mewa and Dawit Tsegaye of the Amhara LSB team, and Walter de Boef, Marja Thijsen and Gareth Borman of the Center for Development Innovation. The main focus is on LSB project activities and activities of partner organizations in seed sector development in the Amhara region.

Outline of this issue

In the first contribution of this issue, Joep van den Broek, delegated advisor to the Embassy of the Kingdom of the Netherlands, describes the emergence of private stakeholders in seed business and the local niche opportunities for small to medium scale enterprises. Next, Mohammed Hassena reports on the progress being made in regional partnerships and the issues identified by stakeholders during regional workshops. This is followed by a series of contributions focussed, more so, on Amhara Region, beginning with a description of the conditions in the field by Tadesse Dessalegn and Demeke Mewa. The team from Bahir Dar University, report on seed production and marketing activities of Zuria Awramba SPC; discussing the activities of 2010, cooperation developments, the baseline assessment and the importance of a business plan in establishing autonomy. The team then go on to describe new LSB innovation sites in Amhara. Tadelle Gashu, a MSc student at Haramaya University, shares his paper with us entitled; ‘Why do farmers join in contractual wheat seed production?’. In the next contribution, Dr Yigzaw Dessalegn of the Amhara Regional Agricultural Research Institute (ARARI) elaborates on efforts to boost crop production in the Amhara Region, mainly through developing technologies and an integrated approach of breeding, promotion and dissemination. Telahune Abera then provides an introduction to the Facilitator for Change charity, describing their activities in seed sector development, the approach of clustering strategies and the lessons learnt. We then hear about Marwoled SPC’s unique approach to clustering which Mohammed Hassena describes as an image of the ‘socialist cooperative system’ of 20 years ago. He highlights their cooperative successes and also, the beneficial consequence of developing a strong internal mechanism for quality monitoring and control. Agribusiness experts, Nugus Kassa and Arfassa Kiross from Mekelle University and Oromia Seed, respectively, report back on their experiences in the Netherlands, having attended the Market Access for Sustainable Development short-course. Finally, please find a list with training opportunities with the Centre for Development Innovation, Wageningen UR.
Seed in Ethiopia: emerging opportunities for private enterprises

By Joep van den Broek

Integrated Seed Sector Development
Together with the Ministry of Agriculture and Rural Development, the Ethiopian Institute for Agricultural Research and the Food and Agricultural Organisation of the United Nations, a concept note was developed in 2009 on Integrated Seed Sector Development (ISSD) in Ethiopia. It builds upon the premise that different seed systems work in parallel within the country. First there is the distinction between the formal and informal system. It is complemented by community based systems which exist next to market oriented systems that operate within global value chains. Research and innovation in the seed sector targets a dominant public and an emerging private sector. Integrated Seed Sector Development, as elaborated upon in the concept note, recognizes all these sectors and systems and endeavours to strengthen this vibrant and pluralistic whole which aims to improve food security and develop the economy.

Sectors and stakeholders
More than 90% of all seed is produced, selected and stored by farmers themselves. This informal system is very important for food and seed security and is also crucial for the conservation of agrobiodiversity. Much research and development activities are undertaken to release and multiply highly productive varieties. These varieties are multiplied by national or regional seed enterprises. Both public, but also private stakeholders, are part of the formal system in which strict improved varieties are multiplied according to strict regulations in relation to quality assurance and certification.

Gradually emerging diverse private sector
Increasingly, farmers' cooperatives and unions, private seed producers and private seed companies, are starting to engage in commercial seed production. International companies are mainly focussing on hybrid maize seed production, including; Pioneer (a multinational seed company having already been active in the country for many years) and the recently arrived SeedCo from Zimbabwe. Solagrow, a potato seed company associated with HZPC in the Netherlands, has started its operations in 2008. In addition, commercial vegetable seed companies have shown their interest to start seed production and are already marketing their (imported) vegetable seeds.

Seed law and plant breeders’ rights
A draft of the new seed law reflects the distinct realities in the seed sector as articulated in the ISSD concept. The new draft law opens up opportunities for differential quality control, taking into account systems of quality declared seed (an opportunity for the LSB's), internal quality control or accreditation (for the international and professional seed companies) and standard quality control or certification (for the medium scale private and public seed enterprises).

In a recent stakeholder meeting on the new Plant Variety Protection Law the ISSD concept was addressed. Discussions centred on different rights for small scale farmers and for commercial companies, and the opportunity for the Proclamation to balance breeders’ and farmers’ rights. For private companies this implies that full protection is likely organized for their in-house developed varieties. For farmers, the Proclamation implies that they maintain their rights to select, exchange, produce and sell seed of local crops and varieties.

LSBs: private seed at the local level
The local seed business project operates between the formal and informal sectors. Supporting 35 farmer groups, it aims at improving their autonomy, their business and marketing skills, and their capacity to produce quality seed of local and improved varieties. The LSBs produce seed of cereals, vegetables and pulses, for which a market exists within their vicinity. They produce seed of a few particular varieties of often self-pollinating crops, for which farmers do not buy seed every year. If in addition high transport costs are involved, the formal seed sector is not interested in seed production of these crops and varieties for these locations. The target area and market potential are too small to justify private investment. This lack of interest creates a niche for the LSBs which can evolve to small and medium scale seed enterprises that cover a wider diversity of crops with quality seed of local or improved varieties.

Emerging private sector of seed companies
Mr. Jan van de Haar is one of the pioneers in the private potato seed sector in Ethiopia. Before establishing Solagrow PLC in Ethiopia, he was the research director of HZPC; one of the biggest potato seed companies in the world. In a short period of time he released five potato varieties which are now being multiplied at several high altitude locations. Solagrow had the benefit of the new regulation on variety release; whereby foreign and successfully tested varieties can be released in Ethiopia within one year. According to Mr. van de Haar, the market is not a problem: “Sometimes a small scale farmer comes to our company with ETB 5000 to purchase seed potatoes. This shows...
that Ethiopian farmers are willing and able to pay good money for quality seed of highly productive varieties.”

Ato Melaku Admassu, Director of Pioneer Seed Ethiopia and president of the Ethiopian Seed Trade Association (the umbrella organisation for large-scale seed companies), sees great opportunities for further growth of the private seed sector; “Over the past decade the demand for seed of hybrid maize varieties is booming. We employ professional extensionists and have local dealers throughout the country. We see that more and more farmers are contacting us and are buying quality Pioneer seed”. The Ethiopian Seed Trade Association organizes visits to India and Kenya for new Ethiopian private seed companies and government officials. Ato Melaku in that regard states that; “we can still learn a lot from these countries, where they have a multitude of both larger and smaller seed companies active”.

Challenges for an emerging sector
For domestic investors, with an interest in the seed sector, challenges exist. Some mention that access to good quality land with irrigation is a problem. Others indicate that they are limited in their marketing because of the absence of private agro-dealers. In their commercial operations they experience challenges by current, predominantly publically guided, price setting mechanisms in the seed sector.

For the vegetable seed industry the conditions for commercial seed production are excellent. Tax exemptions and a ‘one-stop-shop’ to set up a business; promote investment in that sector. In this sector, according to Ato Melaku, Ethiopia could well become one of the biggest seed producers in Africa. Improved infrastructure (a large domestic demand) and access to irrigation, coupled with an already wide diversity in growing conditions, creates great potential for vegetable seed production.

Joep van den Broek is delegated advisor to the Embassy of the Kingdom of the Netherlands, and in that capacity coordinates the ISSD Programme.

Progress in regional partnerships: seeking innovations for seed sector development

By Mohammed Hassena

Achievements in designing projects targeting innovation
In the September 2010 issue of the LSB Newsletter we introduced the partnership component of the LSB project. Steps in the regional partnerships development are: the analysis on the current state of the seed system and the identification of key constraints in regional seed sector development; the establishment of a regional seed core group and regional seed platform; and the design of partnership projects and the facilitation of their implementation. In this issue, we share achievements thus far.

Regional core groups: exploring key issues
The national and regional partnership facilitators have conducted a series of stakeholder consultations to identify appropriate representatives of the key regional organizations that will form the core groups. Core group meetings serve to introduce the partnerships concept to major stakeholders, foster joint ownership, develop joint decision making procedures and guide the design of the partnership projects. These are critical attributes to making the LSB partnership component a success. In all regions, organizations have delegated their representatives and core groups have been established with the first meetings having been held in July and August of 2010. The concept of partnerships, and their overall objectives, were presented so as to familiarize the members. The results of the situational seed sector analysis were discussed with each core group prioritizing those issues requiring primary attention in their regions. About ten priorities were listed from which three to four major issues were identified for further discussion in each regional seed platform. Problem areas prioritized appeared to be similar across regions and are: seed quality, seed marketing, supply of early generation materials, stakeholder coordination or sector management, and capacities of the seed producers. The regional facilitators summarized the identified issues and structured them in such a way that the regional platform could transform them towards practical actions.

Regional workshops: stakeholder consultation
Workshops were organized constituting regional platforms in August (SNNPR and Tigray region) and September (Amhara and Oromia region). Participating organizations included the Bureau of Agriculture and Rural Development, Research, Regional Seed Enterprises, Cooperative Promotion Offices, private companies and NGOs. The workshops were hosted and facilitated by Bahir
Dar University in Amhara, Hawassa University in SNNPR and Mekelle University in Tigray region. The workshop in Oromia was hosted and facilitated by Oromia Seed Enterprise (OSE) and the LSB team from Haramaya University participated in this workshop. The participants were given an introduction to the partnership programme as well as to the major challenges identified by the core group; these issues were subsequently discussed in detail.

**Regional workshops: key issues become innovations**

Upon discussions, participants confirmed the identified issues and entered into brainstorming sessions on possible innovations with the potential to respond to the challenges. As indicated above, issues are similar among regions; however, variability exists in the different strategies or innovations explored to tackle issues and to contribute to regional seed sector development. In the case of seed marketing; the establishment of seed stockists or agro-dealers could be considered as a solution. In Tigray; seed marketing is not a priority issue mainly due to the fact that the public seed sector is the sole supplier. For improving seed supply in Tigray; mechanisms are explored for checking seed quality that enters the regional market, simply because much of the seed used in Tigray is imported from other regions. In SNNPR; it was realized that action should be undertaken to familiarize stakeholders with the new seed law. In Oromia; a partnership was established to attempt to separate the two distinct roles of technical support to quality seed production (thus taking responsibility) and of controlling and regulating seed quality (thus inspecting). This partnership project aims to contribute to the establishment of an autonomous entity that guarantees and certifies seed quality. With this regional variations in innovations, we realize that no single solution exist to deal with the similar issues faced in seed sector development in the country.

**Innovations become tangible partnership projects**

Upon the platform meeting, likewise to what was done after the core group meeting, the regional partnership facilitators took responsibility in summarizing the discussions. They particularly transformed the discussions into potential innovations. LSB teams have consulted concerned institutions and refined the innovations into tangible partnership projects.

**Next steps**

Regional teams have to identify a potential partner for taking the lead in the implementation of each partnership project. During a core group meeting the proposed activity plans (project documents) will be assessed. Identified partners will formally take responsibility for implementing the proposed activities; they will also contribute to project implementation. A principle of the partnership programme is that partners financially, or in-kind, contribute to the projects. Most of the activities planned will be implemented during the next cropping season. The projects targeting seed marketing logically will start ahead of planting. All preparatory work will start in the concerned institutions that have taken responsibility and committed themselves towards making contributions. The regional partnership facilitators and the coordinators of the LSB project in Amhara, Oromia, SNNPR and Tigray regions will facilitate and support these institutions in smooth implementation of the partnership projects with the ambition to promote innovations for seed sector development.

Mohammed Hassena is national coordinator of the partnership programme; he is associated to Wageningen UR/CDI and based in Addis Ababa.
Shaping local and regional conditions that promote LSB development in Amhara

By Tadesse Dessalegn and Demeke Mewa

LSB Amhara: eight sites

The LSB project is an attention drawing effort to study, analyze, and direct successful seed production and marketing at the local level. The project operates in, among others, the Amhara region mostly with Seed Producer Cooperatives (SPCs) in Marwoled, Woken, Goshiye, Gusha Shinkurta, Kudme, Chanke, Zaba Tsion and Bete Yohannes. Local partners vary from local and regional governmental to NGO partners. Woreda Offices of Agriculture are close partners in all sites.

Seed production and productivity

The SPCs are located from mid to high altitudes (1800 – 2700 m asl). Goshye, Kudme, Chanke, and Zaba Tsion are rainfed and irrigated, while Marwoled, Woken, Gusha Shinkurta and Bete Yohannes are only rainfed. The seed produced includes hybrid maize, wheat, malting barley, faba bean, pepper and potato. Some SPCs have expressed an interest in oil crops and vegetables and are considered potential areas for seed production of marketable pulses. Many of the SPCs handle more than one crop and variety (see the table below).

<table>
<thead>
<tr>
<th>LSB site</th>
<th>Crops</th>
<th>Varieties</th>
<th>Area (ha)</th>
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<tbody>
<tr>
<td>Bete Yohannes</td>
<td>Potato</td>
<td>Jalene &amp; Gudene</td>
<td>9</td>
</tr>
<tr>
<td>Chanke</td>
<td>Hybrid maize</td>
<td>BH540</td>
<td>&gt; 110</td>
</tr>
<tr>
<td>Goshye</td>
<td>Hybrid maize</td>
<td>BH660</td>
<td>20</td>
</tr>
<tr>
<td>Gusha Shinkurta</td>
<td>Wheat, Potato</td>
<td>HAR604, Jalene, Gera &amp; Guasa</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Faba bean</td>
<td>Degaga</td>
<td>5</td>
</tr>
<tr>
<td>Marwoled</td>
<td>Hybrid maize, Wheat</td>
<td>HAR1685, HAR604</td>
<td>243, 104</td>
</tr>
<tr>
<td>Woken</td>
<td>Wheat, Malt barley</td>
<td>HAR604, Holker</td>
<td>95, 53</td>
</tr>
<tr>
<td>Zaba Tsion</td>
<td>Bread wheat, Pepper</td>
<td>HAR 1685, Marekofana</td>
<td>15, 1</td>
</tr>
</tbody>
</table>

Amhara sites: variation in situations

2010 was generally a good crop production year, as sites received the required amount of rainfall and crops were appropriately managed in the field. Kudme is expected to start seed production in the coming off-season through irrigation. The experience of SPCs in seed production varies from one year up to more than 10 years; arrangements for seed production vary from contractual production to direct local marketing.

LSB project support to the farmers’ groups

The LSB project has provided services that ensure timely delivery of inputs such as seed and fertilizers. Ahead of time, linkages were enforced between seed producers and input suppliers. Frequent field visits, monitoring and advice-providing services during the growing season supported the members of the SPCs in their seed entrepreneurship. This support will continue until the seed produce has been marketed.

Awareness Creation on Cooperative Principles and Values in Chanke Innovation Site

Variations in seed marketing

Marwoled, Goshiye, Woken and Chanke SPCs produce seed under contractual agreement with the Amhara Seed Enterprise (ASE). The other SPCs will market their seed locally under
arrangement by the Woreda Office of Agriculture. Such arrangements conform with the objectives of LSB development that; primarily, seed demand at woreda level needs to be addressed. Thereby, experience is gained for future marketing beyond the local scale. Some SPCs produce seed with a dual purpose, i.e. they sell their produce as seed and as raw material for processing industries directly. In Woken, the SPC sells barley grain to the malting industry for prices comparable to seed.

**Capacities in marketing and business planning**
Marketing is one of the priority areas for intervention at the innovation sites and in the regional partnership in Amhara region. In 2011 a partnership project will assess the current and potential market arrangements. The SPCs have increased their awareness and knowledge on marketing through discussions and trainings organized and conducted by the LSB innovators. SPCs have defined their vision and midterm goals in a business plan, which enhances their motivation and integrity.

**SPCs: legal status and representation**
Now, all eight SPCs have a legal status, as opposed to the start of the project when only one farmer group had a legal status. Such status leads to increased negotiating power and empowerment by being able to use their legal rights and benefits such as access to credit. The cooperatives will have an opportunity to work with public and private enterprises through their representatives. All SPCs are represented in the regional partnership platform and one representative member has joined the Amhara partnership core group.

**Partnership: organization and innovation projects**
The partnership component has started to support seed stakeholders to work together. The partnership core group assessed current progress in sector development, identified bottlenecks and suggested possible innovations. Core group members jointly manage the partnership agenda. In core group and partnership platform meetings, and through consultations with pertinent government and NGO offices, the following problem areas have been prioritized: (i) marketing and distribution, (ii) seed quality and (iii) crop or varietal diversification.

**Emerging private seed producers**
The ISSD project is underway to develop a specific sector component that will support small to medium scale private enterprises. It will assess their limitations, and will upgrade their skills in technical, financial, managerial and entrepreneurial areas. It is the aim that their linkage with national and international enterprises will be enforced contributing to their profitability. Further, it aims to enhance their contribution to the overall seed system. This new ISSD component will surely contribute to the growth and development strategy of the seed sector in Amhara region.

**Field days at LSB sites**
In mid October 2010, Amhara Seed Enterprise (ASE) and the LSB project of Bahir Dar University organized field days at the Marwoled and Chanke sites. His Excellency, Minister of Agriculture, Ato Tefera Derebew, the Director of EIAR – Dr Solomon Assefa, Ethiopian Seed Enterprise General Manager – Dr Tafesse Gebru, and many other important officials attended the field day in Marwoled. During this event Bahir Dar University was awarded a certificate for its contribution to the progress made in enhancing commercial seed production. HE Vice president of Amhara Region – Ato Gedu Andargachew, the former head of the Bureau of Agriculture at Amhara – Ato Kebede Yimam, and many other important officials attended the field day at Chanke. The speakers at both field days expressed their commitment to support the SPCs whilst the LSB project, through the partnership component, expressed its commitment to foster innovation at regional level and, through collaboration with the SPCs, at woreda levels. The attendance of the officials are evidence of the interest of federal and regional government in the success of the LSB project, associated SPCs and partners such as ASE. The field days demonstrated to officials the tremendous potential of organized farmers’ groups in commercial seed production and marketing of high quality seed of hybrid maize varieties. The LSB sites thereby confirm for Amhara region and the nation their potential as points of reference and innovation.

Dr Tadesse Desalegn and Mr Demek Mewa are respectively coordinator and assistant coordinator of the LSB Unit in Amhara Region based at Bahir Dar University.

Amhara region seed platform participants
Woken Zuria Awramba Seed Production and Marketing Cooperative

*By Dawit Tsegaye, Minilek Kefale, Seid Mohammed and Mesfin Astatkie*

**Location and background**

Woken is one of the 26 rural kebeles found in Dabat Woreda. It is characterized by three agro-ecological categories: high altitude, mid altitude and low altitude. The average annual rainfall is about 1,200 mm which is sufficient for crop production. Woken is among the food insecure kebeles in the Dabat Woreda. The dominant farming system in Woken is a rainfed mixed cereal-livestock farming system. Bread wheat, barley, faba bean and lentil are the major crops grown.

**ORDA: four years of support**

A well organized seed multiplication activity started in 2005 with the support of the Organization for Rehabilitation and Development in Amhara region (ORDA). The objective was to establish a model scheme for community based crop seed multiplication that would ensure availability and distribution of quality seed of improved varieties at local level. Farmers were organized into groups on the basis of their clustered farmland. Farmers have now four years of experience with contractual seed multiplication (bread wheat) in collaboration with ORDA. The NGO has phased out seed multiplication in 2009.

**Woken Zuria Awramba SPC: activities in 2010**

In 2010, the members of the SPC allocated for seed production 95 ha for bread wheat (HAR 604) and 53 ha for malt barley (Halker). Farmers organized themselves into several groups, with each group having its own committee (three members) that guides and monitors seed production on a day-to-day basis. The total amount of yield expected in 2010 is about 2,820 qt for bread wheat and 1,580 qt for malt barley. The fields have been properly managed. A team of experts of the Bureau of Agriculture, Gondar Seed Laboratory Unit, has evaluated the crop stand at different growth stages. The cooperative is planning to purchase the seed produce from its members and sell to its customers/buyers for a reasonable price.

**Woken Zuria Awramba SPC: a specialized cooperative**

Woken Zuria Awramba SPC was legally established on June 2010 under the newly developed rules and regulations for seed multiplication and marketing cooperatives of the regional Cooperative Promotion Agency. The cooperative is specialized in seed business. The LSB project has facilitated a discussion for farmers and partners/stakeholders during the LSB regional workshop conducted at Bahir Dar. Currently the total number of members of the cooperative counts 352 (334 males and 18 females).

**Baseline assessment: basis for support**

The LSB team has made a baseline assessment with the objective to assess the overall status towards seed business development. Moreover, the team is closely working with the cooperative and partners at various levels. Results of the assessment and field supervision can be summarized as follows:

- **Business boundary**: most of the seed is sold to other woredas through the facilitation of ORDA and Dabat Woreda Office of Agriculture indicating their experience of using the existing markets outside the woreda.
- **Decision making**: The executive committee in consultation with cluster/group leaders and cooperative members makes all decisions. They decide how much to produce and sell, where to sell, to whom to sell etc. The roles of partners are simply facilitation and consultation. Capacity building in terms of technical, marketing, management and financial aspects by the LSB project aims to assist the SPC to become more autonomous from ORDA and the Woreda Office of Agriculture, especially for basic seed, technical assistance and marketing.
- **Vision and plan**: As a legal entity, the cooperative has a well structured vision, it is; however, not structured in a well-defined plan. The LSB project has supported the SPC in the formulation and development of the business plan. This has incorporated issues on the development towards autonomy and success in local seed business.
- **Marketing strategy**: The SPC has not, so far, a plan to promote their seed in a well-structured manner. There is a need to assist farmers and partners to develop a market strategy.
- **Financial sources**: The SPC has diversified sources of finance to run seed business. Members make financial contributions and profit contributes through sales. As a legal entity, it has access to credit from formal sources; however, it has not used this option yet.
- **Portfolio of crops and varieties**: Gondar Agricultural Research Centre has conducted participatory variety selection on bread wheat, malt barley and faba bean in the innovation site. Farmers participated in the evaluation and selection of desirable varieties. Thereby, they have indicated
• their preference for certain varieties. However, selection of crop varieties should take place at regular basis. Such a long term partnership with the research centre gives the SPC the opportunity to enhance its crop and variety portfolio, and thereby continuously add new marketable varieties, which is crucial for seed entrepreneurship.

**LSB support on business plan development**

A well developed business plan is crucial for an SPC to be competitive within the seed market system and to become fully autonomous as a seed entrepreneur. Innovators of the Amhara LSB Unit held series of discussions with farmers and their partners on the development of a business plan. The SPC has developed its four years business plan (2010 to 2013). The business plan consists of an analysis of the current situation, financial sources, capacities, structure of the organization, and planning of human resources.

The cooperative has an experience of purchasing seed from its members and sell to buyers/customers with acceptable margins in a very structured manner. Partners planned to include potato in the crop portfolio of the area. In realizing the potential market for potato seed in the locality, the innovation team of the LSB project discussed with farmers, WoA, ORDA and GARC to evaluate improved potato varieties in the coming cropping season. It will be one of the good opportunities for the cooperative to satisfy the high seed demand of the vast highland portion of the woreda, as well as the neighbouring woredas.

*Dawit Tsegaye, Minilek Kefale, Seid Mohammed and Mesfin Astatkie are respectively; seed innovator, farmers organization innovator, agribusiness innovator and regional partnership facilitator at the Amhara LSB Unit at Bahir Dar University.*

**New LSB innovation sites in Amhara**

*By Dawit Tsegaye, Minilek Kefale, Seid Mohammed and Mesfin Astatkie*

In 2009, the LSB project started its support on seed business activities of groups of organized farmers in Amhara in six innovation sites. One of these groups decided to withdraw from the project as it foresaw insufficient opportunity to evolve as a local seed business. Based on an inventory of potential NGO partners, the project has included in 2010 three additional innovation sites: Chanke, Bete Yohannes and Zaba Tsion. These sites vary in their experience in seed business. The group of farmers in Chanke has two seasons experience (through the irrigation and main cropping season) of contractual seed production with Amhara Seed Enterprise (ASE). By this arrangement it has limited autonomy in its operations and organization. The group in Bete Yohannes has four years of experience with seed production and marketing. It has various customers and partners and therefore is more autonomous in its operations. The cooperative, recently established, in Zaba Tsion has only one year of experience with seed production.

**Justification for new sites**

In the identification of the sites, we took into consideration the high demand for quality seed of hybrid maize varieties, and improved varieties of potatoes, bread wheat and tef. We also considered the (relative) experience in seed production and marketing, and the interest of farmers to engage in seed business. In Chanke, the presence of irrigation is considered a potential advantage for seed production. Another consideration in identifying innovation sites was the presence of interested partners to support the sites. Finally, we considered it crucial to diversify partners, crops and situations, and identify situations that varied from innovation sites already associated to the LSB project.

**New innovation sites in Amhara region**

<table>
<thead>
<tr>
<th>Innovation site (kebele)</th>
<th>Zone, woreda</th>
<th>Entry point activity and focus</th>
<th>Crop (and varieties)</th>
<th>Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chanke</td>
<td>North Gondar, Takusa</td>
<td>Contractual seed multiplication</td>
<td>Hybrid maize (BH 540)</td>
<td>WoA, ASE, GARC</td>
</tr>
<tr>
<td>Bete Yohannes</td>
<td>South Gondar, Tach Gayint</td>
<td>Market oriented potato seed production</td>
<td>Potato (Jalene, Gudene)</td>
<td>WoA, FHE, AARC</td>
</tr>
<tr>
<td>Zaba Tsion</td>
<td>West Gojam, Jabi Tehenan</td>
<td>Bread wheat and pepper seed production</td>
<td>Bread wheat (HAR 604), pepper (Mareko fana)</td>
<td>WoA, FCE</td>
</tr>
</tbody>
</table>
Stakeholder consultations
The LSB team consulted, prior to conducting a baseline in each new LSB site, partners and stakeholders at woreda and regional levels (Woreda Office of Agriculture, ASE, and the NGOs Facilitation for Change Ethiopia (FCE) and Food for the Hungry Ethiopia (FHE)). During discussions, the LSB project and potential partners explored common objectives and strategies, and identified potential contributions for successive development of the farmers groups engaged in seed entrepreneurship. The discussions brought a common understanding. During the subsequent baseline assessment, stakeholders provided all the necessary information to the LSB team.

Baseline study
Baseline assessments for the three innovation sites have been conducted with the objective to access the current situations on practical, technical, organizational and entrepreneurship aspects of LSB development and to identify their potential interventions for accelerating LSB development. Baseline data were collected both from primary and secondary sources. Primary data were collected from key informants of farmers’ groups and partner organizations involved in seed production and marketing. We used focus group discussions and individual interviews through semi-structured questionnaires. Informal discussions were also made with researchers of the Amhara Regional Agricultural Research Institute (AARC and GARC) about the seed multiplication/scaling out activities in the innovation sites. Data were analyzed based the modified principles of organizational development and success factors for product innovation that is used in the project.

Note: See also the articles by Frans Verhees on assessing success factors for product innovation in LSB Newsletter 5, and by Walter de Boef and Marja Thijssen on assessing autonomy and entrepreneurship in seed business development in the LSB Newsletter 6.

Legality of seed cooperatives
Zaba Tsion Seed Producers and Marketing Cooperative and Serto Melewet Vegetables and Fruits Seeds Producers Cooperative are respectively established in Zaba Tsion and Bete Yohannes and are recognized legal entities. In Chanke, seed producers were not yet organized in the form of a cooperative at the onset of the collaboration with the LSB project. The LSB team supported the farmers’ group and Woreda Office of Agriculture organizing the farmers and transforming the group into a legal Seed Producers Cooperative. The LSB team supported the seed growers in creating awareness on cooperative principles and values, setting up of a transitional committee, preparation of draft cooperative bylaws and the final approval of bylaws in the general assembly.

Developing action plans for 2010/2011
Based on the baseline assessment, the LSB team identified priority areas that need integrated interventions for accelerating LSB development. These were transformed into action plans for each site. The LSB team will facilitate the process of discussing and finalizing the action plans in a participatory approach with the SPC leaders, farmer members and their local partners. The LSB project will concentrate its contributions on coaching of the cooperatives in their development to becoming autonomous, market-oriented and professional in their seed entrepreneurship, and therefore support them in marketing, financial management, technical aspects of seed production, and legal cooperative establishment.

Business plan development
The baseline assessment for the three innovation sites indicated that seed producers’ cooperatives do not have the experience and skilled manpower in the area of marketing and business planning. The LSB team will assist the cooperatives to develop their own business plan that will include an extensive component on marketing their future seed produce.

Making the set of sites diverse and complete
The three sites complement the total set of innovation sites in Amhara Region; thereby the total set proves a set of complementary situations, covering various situations, partners, crops, experience in seed production and even marketing opportunities required for future up- and outscaling LSB in the region.

Dawit Tsegaye, Minilek Kefale, Seid Mohammed and Mesfin Astatkie are respectively; seed innovator, farmers organization innovator, agribusiness innovator and regional partnership facilitator at the Amhara LSB Unit at Bahir Dar University.
Why do farmers join in contractual wheat seed production? 
A case study from Woken, Amhara

By Tadelle Gashu

Introduction
In recent years, research, extension and development programmes have adopted community-based participatory approaches that unify the efforts of various stakeholders with the aim of overcoming the weaknesses in the formal research-extension linkage and improve localized seed availability on a sustainable basis. One of these approaches has been community-based secondary seed multiplication schemes whereby farmers’ roles are shifted from passive recipients to that of active seed producers and eventually serve as secondary seed sources and disseminators. Reportedly, such efforts are found to increase access of many farmers within the shortest time and at low cost, for they are essentially grafted onto the local social networks and farmers-to-farmers extension approaches. However, seed production of improved varieties requires modern agricultural practices and application of recommended inputs which makes the situation tedious for many small-scale farmers. Here, production of seed through contract agreement reduces farmers’ agricultural input shortage and market problems until farmers become more independent through their cooperative. Therefore, this study was intended to answer the question of what factors affect farmers in participating in contractual seed multiplication, and also to evaluate the impact of these programmes on small-scale households’ income levels.

Objective of the study
The main objective of the study was to identify determinants that affect farmers’ participation in contract wheat seed multiplication in Woken kebele, Dabat district.

Research context: contractual seed production
In the 2008 production year, wheat and faba bean seed production was undertaken through a contractual agreement between ORDA (Organization for Rehabilitation and Development in Amhara) and Woken Seed Production and Marketing Cooperative (SPMC). The current study assesses, using economic models, the willingness of farmers to join in the contractual seed production in this context.

Research methodology
In the process of selecting respondents, to decrease very small degrees of freedom on wheat seed producers side, equal value would be given for both. Hence, 50 seed producers from 216 households and 50 grain produces from 1354 household respondents were selected through a simple random sampling technique. Nevertheless, the proportion of wheat seed producers was over-estimated. To reduce this sample bias problem, weighting the proportion of the two groups was employed. Primary data were collected from selected respondents through structured questionnaires. Secondary data were also collected from governmental offices and NGOs.

The nature of participation on seed production is a binary choice. Besides sample selection, problems were expected with the survey, i.e. existence of unobserved factors before participation that correlated with the participation decision and income contribution simultaneously, which overestimates impact of the participation decision on the seed producers’ side. Here a two stage model that corrects sample selection bias was preferred. Hence, Heckman’s two stage model was employed to see the participation decision and the impact of wheat seed production simultaneously. The model estimates inverse mill’s ratio in the first stage and used an explanatory variable in the second stage to correct self selectivity bias. In the first stage the probit model is used to see the participation decision and the second stage employed sample selection model to evaluate impact of participation on seed producer farmer’s income levels.
Factors determining farmers' participation in contractual wheat seed production

Using the probit model and sample selection model, a number of variables were identified as main factors to motivate farmers to participate in contractual wheat seed production. ‘Education’, ‘training’, ‘credit access’, and ‘income obtained from livestock’ were found to be the main factors. The results of the application of the model for wheat seed production are presented in the table below. Each of these factors that are identified to be significant in determining the willingness of farmers to join in contractual seed production is described in summary:

Maximum likelihood estimates of probit model for contract wheat seed production

<table>
<thead>
<tr>
<th>Variables</th>
<th>Co-efficients</th>
<th>t-ratio</th>
<th>Marginal effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-2.29</td>
<td>-3.2***</td>
<td>-0.91***</td>
</tr>
<tr>
<td>Credit access of HH</td>
<td>1.20</td>
<td>3.31***</td>
<td>0.48***</td>
</tr>
<tr>
<td>Training participation of HH</td>
<td>1.07</td>
<td>2.80***</td>
<td>0.43***</td>
</tr>
<tr>
<td>Educational level of HH head</td>
<td>0.16</td>
<td>1.93*</td>
<td>0.07*</td>
</tr>
<tr>
<td>Livestock income of HH</td>
<td>0.0</td>
<td>1.69*</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Proportion of hired to total labour</td>
<td>0.02</td>
<td>1.64</td>
<td>0.01</td>
</tr>
<tr>
<td>Farm equipment possession of HH</td>
<td>0.0</td>
<td>1.45</td>
<td>0.0</td>
</tr>
<tr>
<td>Contract farming experience of HH</td>
<td>0.46</td>
<td>1.16</td>
<td>0.18</td>
</tr>
<tr>
<td>Seed production experience of HH</td>
<td>0.44</td>
<td>1.14</td>
<td>0.18</td>
</tr>
<tr>
<td>Market information of HH</td>
<td>-0.30</td>
<td>-0.66</td>
<td>-0.12</td>
</tr>
<tr>
<td>Farming experience of HH</td>
<td>-0.01</td>
<td>-0.64</td>
<td>-0.004</td>
</tr>
<tr>
<td>Number of draught animals</td>
<td>-0.05</td>
<td>-0.33</td>
<td>0.02</td>
</tr>
<tr>
<td>Size of land rented in HH</td>
<td>0.08</td>
<td>0.13</td>
<td>0.03</td>
</tr>
<tr>
<td>Off-farm income of HH</td>
<td>0.0</td>
<td>0.01</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

* ,*** show level of significance at 10%, 5% and 1%, respectively.

Education: Educated farmers are more likely to participate in new agricultural programmes like contractual seed production. This is because they can more easily understand the potential benefits. Consequently, in supporting LSBs, we need to focus on educating farmers or look for measures to overcome this bias that seed production is only accessible to more educated and most likely resourceful farmers.

Training: ORDA has created awareness to join and subsequently train farmers participating in contractual seed production. In line with the conclusion on education, and considering the conditional investment in awareness-raising and training, this finding confirms that these are critical factors to expand seed production and determine farmers interest and willingness to join.

Credit access and income of livestock: Credit access solves farmers’ agricultural input purchasing capacity problem and potentially motivates them to participate in seed production as a farm income generating activity. Improving credit accessibility of farmers may induce seed production. Similarly, income from livestock production as a source for financial resources is an important factor for farmers to join in contractual seed production. Livestock income provides the basis for resources to purchase the necessary inputs.

Relation between farmers’ income and participation in contractual seed production

The sample selection model was used to identify factors that explain the effect of contractual seed production on the farmers’ income level. The model compared the difference in income between contractual seed production and grain production of wheat. In the table below, the results demonstrate that also ‘experience with contract farming’, ‘training on contract seed production’, ‘formal leadership experience’, and ‘Dummy participation’ are significant variables. This means that these factors contribute significantly to the growth in income based on the participation in contractual wheat seed production, when compared to the commercial production of wheat grain as estimated in per hectare wheat farm land. It should be realised that ‘Dummy participation’ is used as a variable to show the increased profit difference of seed producers from grain producers in per hectare wheat farm land (see the table below). Wheat seed producers got an average gross margin of ETB 9096, whereas wheat grain producers got an average gross margin of ETB 6747. The difference in income between the two groups were due to high productivity by contractual seed producers (22.50 qt/ha > 16.54 qt/ha) and receiving 15% premium price on the current grain price. The difference, which is indicated with the dummy variable, is ETB 1214 per hectare farm land.
### Results of sample selection model for wheat seed and grain production

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficients</th>
<th>t-ratio</th>
<th>Marginal effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6294.29</td>
<td>27.34***</td>
<td>6294.29***</td>
</tr>
<tr>
<td>DUMMY participation</td>
<td>1213.18</td>
<td>2.24**</td>
<td>1213.19**</td>
</tr>
<tr>
<td>Training</td>
<td>446.30</td>
<td>1.89**</td>
<td>446.30**</td>
</tr>
<tr>
<td>Contract farming experience</td>
<td>420.68</td>
<td>1.95*</td>
<td>420.68*</td>
</tr>
<tr>
<td>Leadership experience of HH head</td>
<td>313.42</td>
<td>1.80*</td>
<td>461.19*</td>
</tr>
<tr>
<td>Draught animals</td>
<td>4.45</td>
<td>0.05</td>
<td>4.44</td>
</tr>
<tr>
<td>Total livestock excluding draught animals</td>
<td>31.74</td>
<td>0.70</td>
<td>31.74</td>
</tr>
<tr>
<td>Cultivated land size</td>
<td>61.91</td>
<td>0.32</td>
<td>61.91</td>
</tr>
<tr>
<td>Credit access</td>
<td>-175.34</td>
<td>-0.65</td>
<td>-175.34</td>
</tr>
<tr>
<td>LAMBDA</td>
<td>461.29</td>
<td>1.38</td>
<td>461.10</td>
</tr>
</tbody>
</table>

*, **, *** show statistical significance at 10%, 5% and 1% respectively.

#### Implication for LSB development

Based on the quantitative data and their analysis, in promoting farmers’ interest in joining contractual seed production awareness-raising and training on seed production were found to be crucial for farmers to join in contractual seed production. The variables status of education, access to credit and income from livestock were also significant factors. These data show that more farmers with access to education, information and training (capacities) but also (financial) resources are more likely to join in commercial seed production (in a contractual arrangement). In order to attract farmers with less access to education and resources to join in seed production, training, awareness and to some degree education can be addressed. Thereby this would open options for different categories of farmers to join in contractual seed production. Since the study also shows that contractual seed production increases income compared to grain production, efforts should be made to include dissimilar classes of farmers in commercial seed production activities. No single structure for awareness raising, training and service provision is possible, if the interest is to open seed production to groups of farmers from dissimilar socio-economic strata. Access to credit also emerges as a determining factor for farmers to join or not. Even though the current study analysed the interest of farmers in joining contractual seed production, the results of the study may be interpreted likewise in a setting of local seed business development of more autonomous Seed Producer Cooperatives.

Tadelle Gashu is a MSc student in the agricultural economics post graduate programme of Haramaya University; he received an LSB-MSc grant to conduct his research activities in Amhara region. His supervisor is Dr Chilot Yirga at Holeta Research Institute, and he is further coached in Amhara region by Dr Tadesse Dessalegn from Bahir Dar University.

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### ARARI’s effort and approach to boost crop production in Amhara Region

**By Yigzaw Dessalegn**

**Amhara: unexploited potential in agricultural productivity**

Amhara region has a diverse agro-ecology with altitudes ranging from 100 to over 4000 m asl. It has different soil types, and ample surface and sub-surface water resources. Consequently, the region has a suitable tract of land to grow a diversity of crops. Some parts of the region are considered as the cereal, pulse and oil crops belt of Ethiopia. In accordance, the Central Statistics Authority of Ethiopia in its 2008 report indicated that 32%, 45% and 41% of the total cereal, pulse and oil crops produced in Ethiopia was contributed by Amhara region. However, the regional average yield of cereals, pulses and oil crops are 1.5, 1.2 and 0.7 tons/ha, respectively. These figures are very low compared to African and world averages. This is partly due to unavailability and limited supply of seed of high yielding improved varieties.

**ARARI: technologies, varieties and seed**

To curb the problems on shortages of crop production technologies and seed supplied of improved varieties Amhara Regional Agricultural Research Institute (ARARI) is working on crop production technology development, demonstration, and breeder and pre-basic seed multiplication of improved varieties.
In the last 13 years, ARARI released 91 improved varieties of 22 crop species; the varieties are adapted to production systems in several parts of Amhara region (see the table below). Improved varieties were released for cereal crops, pulses, oil crops and few root and vegetable crops (see the table below). The productivity of these improved varieties has been tested both on-station and on-farm. It is as high as three fold compared to the varieties currently grown by farmers. This clearly indicates the importance of extending these varieties to boost-up crop production in Amhara region. However, replacement of low yielding farmers’ varieties by these improved varieties requires extensive demonstration and seed multiplication efforts.

<table>
<thead>
<tr>
<th>Number of improved varieties released by ARARI for production in Amhara region</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crop group (# crops)</strong></td>
</tr>
<tr>
<td>Cereals (9)</td>
</tr>
<tr>
<td>Pulses (5)</td>
</tr>
<tr>
<td>Oil crops (5)</td>
</tr>
<tr>
<td>Root &amp; vegetable crops (3)</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Demonstration of varieties: promoting adoption and dissemination**

Demonstration plays a vital role to enhance the process of adoption of improved technologies. ARARI demonstrates its improved technologies mainly to farmers, agricultural extension workers and seed producers. It demonstrates technologies through preparing and distributing leaflets, training, organizing field days and using mass-medias (TV and radio). It popularizes improved varieties by planting on large size plots and in farmers’ fields. This was found to be an important approach not only to create awareness but also to assess the performance of new varieties. The approach is also a means to start seed production of newly released improved varieties in specific areas, and thereby promoting further multiplication. Nowadays, farmers are considered as primary hosts for demonstration activities and as an important source to further disseminate seed of improved varieties of crops which are not multiplied by seed enterprises. To illustrate the magnitude of this effort, in 2009 only, ARARI demonstrated its improved crop varieties to farmers, agricultural extension workers and seed producers in 37 districts of Amhara region.

**ARARI seed production: a variety of channels**

Quality seed of improved varieties is considered fundamental to improve crop productivity. However, in Amhara region, like in other parts of Ethiopia, the majority of small scale farmers mainly obtain seed from informal channels which include farm saved seeds, seed exchange among farmers or/and the local grain market. These informal channels contribute about 90-100% of the seed supply depending on the crop type.

ARARI encourages the supply of quality seed of improved varieties to farmers through different approaches. It multiplies and provides pre-basic seed for public and private seed companies in order to multiply and distribute certified seed of improved varieties to small-scale farmers. In addition, ARARI establishes seed producer farmers groups, and trains them about the procedures and requirements of quality seed production. It further provides them with starter seed and assists them in seed marketing. This approach targeting local seed dissemination has become very important especially to multiply and supply quality seed of crop species which are not handled by private commercial seed growers and public seed entities. It is also found to be a lucrative income generating activity for small-holder farmers engaged in local commercial seed multiplication and marketing. For example, ARARI works with a potato seed producer farmers group in Awi Administrative Zone and with a vegetable seed producer farmers group in the North Shoa Administrative Zone; both groups have highly benefited from the collaboration. ARARI multiplied about 120 tons of seed of 85 improved varieties of 18 crops in 2009 and distributed the seed of those improved varieties to formal and informal seed producers in 2010 (see the table below). Through this practice ARARI aims to stimulate the process of multiplication and distribution of quality seed of improved varieties in Amhara region.

<table>
<thead>
<tr>
<th>Number of crop species and improved varieties multiplied by ARARI in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crop group</strong></td>
</tr>
<tr>
<td>Cereals</td>
</tr>
<tr>
<td>Pulses</td>
</tr>
<tr>
<td>Oil crops</td>
</tr>
<tr>
<td>Roots, vegetable and spice crops</td>
</tr>
</tbody>
</table>
Irrigated agriculture: increasing available onion and cool season vegetable seed

Crop production using irrigation is expanding in Amhara region. Most of the irrigated farm lands are planted by vegetable crops. However, the seed of most of the vegetable crops is imported. Seed of vegetable crops is not widely produced in Ethiopia due to lack of improved varieties and lack of experience in vegetable seed production. ARARI has conducted a base line study and identified ideal seed production season and locations in Amhara region for cool season vegetables (carrot, head cabbage, beet root and Swiss chard). As a result, small scale farmers started seed production of cool season vegetables and onion in North Shoa and South Gonder Administrative Zones, respectively. This practice dramatically reduced the price of vegetable seed in local markets and therefore improved the accessibility of seed of those crops to small scale farmers.

Potato seed production: requiring specific attention

Some major horticultural crops are vegetatively propagated, contributing to the risk of dissemination of virus and bacterial diseases. Prominent examples are bacterial wilt and PLRV in potato that is spread through seed tubers. In addition, the natural multiplication rate of vegetable crops such as potato is very low. Responding to this demand, ARARI has established a tissue culture laboratory to solve both the diseased planting material and reproduction rate problems. It has started multiplying seed tubers of improved potato varieties using its tissue culture laboratory.

Collaboration between ARARI and LSB

ARARI is a major collaborator with the local seed business (LSB) project at Goshie and Gusha innovation sites; farmer groups were established by ARARI as FREGs. ARARI supplied planting materials of improved potato varieties for both sites and also provided and will provide breeder and pre-basic seed of improved varieties to the project sites as a whole. It is also involved in participatory evaluation of recently released faba bean and bread wheat varieties in north Gonder and West Gojjam Zones, respectively. ARARI is a key partner in the LSB Partnerships platform and is a member of the core group and attended several workshops organized by the project. It is also ready to participate in the LSB Partnerships projects and some projects are intended for the most part to be run by the institute.

Integrated approach of breeding, promotion and dissemination

Generally, improved variety development alone will not automatically enhance crop production and productivity. Breeding and variety selection can only be effective if complemented by strong demonstration and seed multiplication supports. In support no single channel exists, only a diversified approach working with public and private entities, but also working with farmer groups, can ensure that quality seed of improved varieties reaches the farmers. This can only happen if all stakeholders in crop production fully participate and join forces. Therefore, ARARI is engaged in improved technology development, promotion and seed production activities with a multitude of stakeholders.

Dr Yigzaw Dessalegn is Crop Research Director of the Amhara Regional Agricultural Research Institute (ARARI).

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FC’s activities supporting farmers in local seed production and supply

*By Telahun Abera*

Introduction to the organization

Facilitator for Change (FC) was established as an indigenous, non-governmental development organization in 1998 and it was re-registered in October 2009 by the Charities and Societies Agency as an Ethiopian resident charity. FC has been working closely with stakeholders at different levels to bring change in the life of vulnerable and marginalized community groups with the ultimate objective of changing the disadvantaged livelihoods of women and children. FC coordination office is located in Addis Ababa. It has seven projects in Amhara and Oromia regions.

FC Project in Western Gojjam

One of the key activities of FC in Amhara region is the establishment of market oriented farmers’ organizations in Western Gojjam. FC started with these activities in 2007 with the financial support of its donors Oxfam GB and KNH. The respective project has the following objectives:

- to organize farmers to solve their social and economic problems;
• to enhance their skills in saving and credit;
• to support farm diversification through the introduction of new varieties and crops; and
• to promote the production and marketing of marketable crops.

**Crop and variety diversification**

In 2007 and 2008, FC had supplied inputs like 75 quintals of soybean seed, 20 quintals of haricot bean seed, 22 quintals of seed of improved faba bean varieties, 11 quintals of wheat seed (HAR 1685), and 22 kg of pepper seed (Marco fana). In addition it has distributed 36 kg of rhizobia in order to promote organic forms of fertility improvement. All activities were targeting farm diversification.

**Establishment organizations**

In four years, the project has supported the establishment of 11 Market Oriented Farmers Organizations (MOFOs). Herewith it aims to improve the socio-economic and cultural situation of the farmers in three adjacent woredas being Bure, Womberma and Jabitenan.

**Efforts in local commercial seed production**

Farmers in the cooperatives gained experience in seed multiplication. However, they produced seed which was not enough to satisfy the local demands. The Ethiopian Seed Enterprise (ESE) and some private seed producers are supplying improved seed in the area. The recent experience of farmer based seed multiplication and marketing of farmers provided an opportunity for establishing and strengthening their own seed multiplication and marketing cooperatives. Since 2010, four MOFOs have been changed into Seed Production and Marketing Cooperatives (SPCs). It is the intention to transform the remaining seven MOFOs gradually as well. The SPCs are legalized and have become independent seed business entities. FC made significant investments in supporting the construction of storage facilities and offices. It further strengthens the SPCs through technical support, provision of market information, facilitating market linkage and provision of inputs. The SPCs are linked with Amhara Seed Enterprise, Damot Agricultural Cooperatives Union, Bureau of Agriculture, and Cooperative Promotion Agency at different levels. These stakeholders are jointly responsible for training, input supply and technical support on quality control, certification and marketing linkage, and legal and organizational advice.

**Clustering strategies applied**

For commercial seed production, the cooperatives have used a clustering approach. The approach clustering was designed and implemented by the cooperatives with the support of WoARD office, Cooperative Promotion Office and FC staff. Many challenges were faced to organize farmers in clusters; however, most were solved by using various techniques. A first technique used is the exchange of land; a farmer who has more than 0.5 hectare for seed multiplication shares his or her land with other farmers. Other techniques are renting of land and inviting neighbouring farmers to become member. In case farmers were unwilling to join, the government provided seed support in order to guarantee the required isolation distance among dissimilar varieties.

**Status of commercial seed production**

Currently, the four SPCs have produced 53 ha hybrid maize (BH660), 65 ha wheat (HAR 1685) and 6 ha pepper (Marco fana) for seed multiplication. It totals an area of 124 hectares which is formed by a total of 12 clusters. The number of farmers engaged is 497 (135 female). The table below depicts the expected seed production in 2010 for hybrid maize, wheat and pepper in the four cooperatives. FC aims to purchase 784 qt of hybrid maize seed, 1,100 qt of wheat seed and 2 qt of pepper seed for the second phase seed distribution to approximately 8,000 farmers. The aim is to contribute to an increase in production and productivity for those crops in 2011.

<table>
<thead>
<tr>
<th>Woreda</th>
<th>Crop</th>
<th>Area (ha)</th>
<th>Production (qt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Womberma</td>
<td>Maize</td>
<td>48.5</td>
<td>1940</td>
</tr>
<tr>
<td></td>
<td>Wheat</td>
<td>35</td>
<td>1225</td>
</tr>
<tr>
<td>Brue</td>
<td>Maize</td>
<td>4</td>
<td>160</td>
</tr>
<tr>
<td>Jabittenan</td>
<td>Wheat</td>
<td>15</td>
<td>525</td>
</tr>
<tr>
<td></td>
<td>Pepper</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

**Lessons learnt**

The whole exercise became an important learning process and experience was built-up in cluster formation and organized forms of seed production and marketing; both in terms of producing quantity and quality of seed. Women’s participation and membership in seed multiplication and marketing cooperatives has increased from 9% in 2009 to 29% in 2010. Generally, it is foreseen that through the incentives the gap between demand and supply for seed of improved varieties will be decreased significantly using this approach of organizing farmers in SPCs and clustered seed production. However, government, research institutes, NGOs and farmers (organizing themselves in SPCs) will need to work closely to scale-up the existing activities to go from local up to regional impacts.
Collaboration between FC and the LSB project
In 2009, FC has entered into a partnership agreement with the LSB Unit at Bahir Dar University. Collaborative activities are training, financial support for SPCs, sharing best experiences on seed multiplication and working together for up-scaling local seed production and marketing. Currently, one of our SPCs (Edget ber wojet SPC) is a collaborative LSB site to follow up their activities of seed production and marketing.

Tilahun Abera is project coordinator with Facilitator for Change (FC) in the Building better future for children project based at Bure, West Gojam, Ethiopia.

Marwoled SPC: unique in its clustering, commercial orientation and organization

By Mohammed Hassena

If seed is to be considered as a market commodity, scattered small farmers will have rare chances to take their proper share in this market. Seed is not a commodity in the case of Ethiopia, but are there no chances for small farmers to take their share in contributing to the potential commodity which seed is at local or regional markets. In September, during a coaching visit, I joined with Dr Tadesse Desalegn and Dawit Tsegaye, of the LSB unit in Amhara region, and Walter de Boef (LSB Advisor) in a visit to the Marwoled Seed Producer Cooperative (SPC). What Walter and I learnt during this visit is that a lot of experience exists in Amhara in clustering small farms. This particular experience in Amhara region shows the potential of small farmers in becoming commercial seed producers. Not for nothing; two weeks after our visit, His Excellency Minister of Agriculture - Ato Tefera Derebew, Director of EIAR - Dr Solomon Assefa, Ethiopian Seed Enterprise General Manager - Dr Tafesse Gebru, and many other officials have attended the field day in Marwoled. They also were greatly impressed by the experience of the SPC in this LSB site. In LSB coordination, we are proud to be associated with this group of farmers and consider this SPC as an example for others in the way they have organized clustering, are organized within their cooperative, and developed mechanism for increasing their autonomy and commercial orientation. In this article, I highlight the practices of Marwoled SPC which could be used as a lesson for other farmers and cooperatives interested in entering in a collective, but commercial manner, in the seed business.

Clustering for production of genetically pure seed
Seed production, unlike grain production, has distinct requirements starting from field selection, the production process and processing, to marketing. For instance in the case of the production of seed of hybrid maize varieties, isolation distance is very important as well as management practices such as de-tasseling. In Ethiopia, most farms are so small that individual farmers cannot manage isolation distances. This urges them to negotiate with surrounding farmers not to plant similar crops within a certain range or time, particularly under rain fed conditions where time isolation is almost impossible.

Clustering for facilitating quality control
In addition to the isolation, seed production involves external quality control to certify that the produced seed satisfies the minimum quality requirements. In Ethiopia, quality control is usually a free service rendered by public agencies; the inspector has to visit the seed production field at least at certain critical stages of crop growth to make sure that the seed produced meets the minimum standard. With small farms scattered all over the area, field inspection is very costly making seed production uneconomical if this service is to be considered. Moreover, because of shortage of material and human resource capacities within public responsible agencies, not all fields are visited as required by inspectors. This leads to the production and supply of poor quality seed. This contrasts with inspection of large farms, where the costs are usually covered by externals or producers themselves. Due to economies of scale, the large seed producers usually enjoy facilitating inspection renders. If small holder farmers cluster their farms for seed production, such disadvantages compared with large farmers are overcome, and because of strong internal mechanisms in quality monitoring and control, their original disadvantage may even be overcome and turned into a comparative advantage for their position in seed business.

Bylaws: supporting collectiveness and quality management
Marwoled SPC has specific bylaws which help them to assure the entire production process. In this bylaw, the cooperative monitoring group checks each and every plot for its agronomic management. What is very interesting is if the owner has not
conducted the agronomic operation as required, say weeding for example, the group will weed the plot first and then accuse the owner for not weeding his/her plot at the right time. Additionally, if any farmer is not practicing the farm operation beyond his control (sick, detained, etc), his/her share of farm activities will be controlled by the group. Such bylaws and their implementation are the basis for strengthening the internal quality control of the group.

Clustered small farms: an image of disappearing individual plots
Marwoled in Amhara region is one of the many seed producing cooperatives. It mainly produces wheat and maize seed. It has been engaged in seed production for 13 years. It started commercial seed production within the Farmer Based Seed Production and Marketing Scheme in collaboration with the Ethiopian Seed Enterprise. Originally farmers were individual contract growers; however, in 2009 they organized themselves in a Seed Producers Cooperative (SPC). The cooperative has 162 members; it produces seed on a total area of 347 ha; the per capita seed production holding is only 2.14 ha. Considering this original farm size, one imagines the usual small plots with all ranges of crops and varieties signifying the subsistence nature of the farming. When we visited the Marwoled SPC, the scenario emerged as complexly different from what we would have imagined. The SPC manages to grow hybrid maize seed on 243 ha and bread wheat seed on 104 ha. The seed for those crops is produced on ‘large single fields’ as if the farms are owned by one farmer. In this case, you would be confused what you understand about Ethiopian small farmers’ realities and the existing large field of maize and wheat seed production we visited. One could even imagine that the socialist cooperative system of 20 years ago returned in Ethiopia that put all land together in cooperative farms.

Farmers’ organization: moving smartly to economies of scale
Marwoled farmers amalgamated their small plots in a smart way, on one hand keeping their private ownership of land and on the other hand benefiting from the advantage of being organized as a cooperative. The cooperative has the objective of producing seed as a commercial operation and all members work towards attaining this objective. In this case, the cooperative executive committee prepares an annual farm plan that guides where to produce what. In an area which is decided upon by the cooperative to produce, for instance wheat, only wheat seed of a specific variety will be produced for seed multiplication. A farmer who does not want to produce wheat has to exchange land with a farmer in the maize plot who is willing to produce wheat. Thus individual farmers make such arrangements to fit into the major cooperative plan. The seed field, particularly the maize field, seems as if grown by one farmer, production management is highly organized and structured. In the utmost effort, farmers attempt to orientate the rows of maize within plots across the fields in the same line. Having this arrangement will help the farmers to make sure that they keep the isolation distance required without any problem, and to reach maximum productivity. They know that seed production is a commercial activity reaching maximum yields. For those who support the cooperative activities, technical support and quality monitoring becomes easy, because the fields are continuously covered by the same variety, or in the case of hybrid maize, same inbred lines, and there is no need to move from one plot to the other. This is the result of commitment from but also understanding among the farmers who are members of the cooperative, that seed production is rendering profit. Marwoled SPC and its members are a good example for groups of small farmers interested in commercial seed production in Ethiopia.

Mohammed Hassena is national coordinator of the partnership programme Wageningen UR/CDI based in Addis Ababa.

Market access for sustainable development course throwing fresh light on the LSB model

By Nugus Kassa and Arfassa Kiross

In November 2010, we were two of the 48 participants in the short course entitled ‘Market access for sustainable development’, organized in Wageningen, the Netherlands. The course was organized by Wageningen UR/Centre for Development Innovation. Participants came predominantly from Africa and Asia. The participants were from government organizations, NGOs, universities, and other organizations. These professionals are all working in the area of markets and development. In the current article, we share the experience of joining in this short course and indicate what we have learnt and
Our first exposure
It was for us the first time to go abroad and get involved, as a short course participant, with people who come from different continents. One can imagine the impact on our professional life, in addition to: the new insights acquired from the training; the benefits and gains from being exposed to another continent and the diversified cultures, values and knowledge of the participants. We could appreciate the inputs of the participants whose experience-sharing, piercing questions and opinions gave the course life. Thus, we have taken our stay in the Wageningen as a special moment that throws fresh light on our personal and professional development.

Training method: staying practical and real
The course had both theoretical and practical background in the class. In addition to lecture time, all the trainees participated in discussions. After lectures, group work such as poster sessions, group discussions and group work presentations was organized. Arfassa considers this type of exercise very important in understanding and implementing, in a practical way, what we should adopt back home. Each participant shared experience, knowledge and skills during discussions in every aspect. Before Nugus went to the Netherlands he had taken so many short courses in Ethiopia. But what he observed and learned that was different from previous experiences was that in the past they focused more on theoretical aspects whereas the course in Wageningen was epitomized by tangible examples accompanied by practical visits. Therefore, one important point he learned was that what is thought of in the classroom as theoretical must be attached to the situation of what is actually happening in reality.

Course: structure and topics
The first part ‘market participation’ dealt with all the market economic dynamics linking small scale and subsistence farmers to market chains. Specific subjects were discussed including market economic dynamics, formation of producer associations and enterprises, integration and business approaches to development. The second part ‘access product’ dealt with the issues a product meets on its way to its customer. Subjects captured the concept of value chain governance, sustainable trade, supply chain management and logistics, product traceability, certification and standardization, and food quality and safety issues. The third part of the course shifted towards ‘evaluating the institutional environment of the value chain’. Participatory approaches to cover bottlenecks in the institutional domain of the value chain were discussed and practiced.

Sessions on strategic policy development and planning to support market participation and product access were organized. Planning tools and techniques practiced were visioning, goal setting, stakeholder analysis, SWOT analysis, and the ‘cigar box’; they were practiced on cases as provided by individual participants. The output of this third week was a set of six “bankable” project proposals prepared by each group.

Revisiting calculations in the business plan in Tigray
We aim to apply new ideas, concepts and methodologies, acquired in the LSB project, at the innovation sites. Usually, businesses have been observed to fail due to improper formulation of a business plan. A properly designed business plan serves as a springboard for the business to become successful in due course of achieving its goal. Cognisant of the above, the LSB Project had prepared business plans for all its innovation sites. In the marketing strategy of the business plan, profit was calculated based on a bookkeeping formula. However, after participating in the market access course, the idea of the cigar box model emerged very helpful to Nugus. He realized that the profit computed in the business plan using the bookkeeping formula depicted certain drawbacks that, to some extent, jeopardize the quality of the business plan. This is due to the fact that the profit estimated in the business plan omitted the calculations of margin, contribution and full capacity utilization of seed produced by the local seed business, and the break-even volume of raw materials that is needed to produce seed. As a result, the business plan does not show clearly which type of seed production will have higher, lower and negative contributions for the profit of the LSB. The effect of capacity utilization on cost price and profit is understated. Therefore, in order to improve the quality and forecasting ability of the business plan and to enhance the quality of estimates for the profit of the LSB, Nugus has managed to revise the business plan applying the concept and methodology of the cigar box model. In the cigar box, profit of the LSB can be calculated using a cost-accounting formula. This formula will help to minimize the aforementioned drawbacks of the bookkeeping formula to their lowest ebb.

Revisiting calculations in the business plan in Tigray
Another topic addressed in the LSB project is supply chain management. Nugus plans to revise and evaluate the supply chain of seed production in the innovation sites. Then, after carefully scrutinizing of the supply chain, using the concept of supply chain management, together with the key stakeholders, he will develop a system on how to monitor and manage the supply chain of seed production in Tigray region.
Learning about the role of entrepreneurs and private sector in development

From discussions in the course and in particular discussions while meeting Dutch policy makers, Afassa highlights the need for more public and private investment in agriculture, particularly in scientific, technological and institutional innovations which address the needs, and are accessible to, small producers and entrepreneurs. He learnt that, likewise to agriculture in the Netherlands, producers’ associations could play a major role in fostering innovation in agriculture moving towards a market economy.

Experiencing the Netherlands

Practical sessions of the course included a field trip to a horticultural improvement center, the flower auction and private organic fruit farms. Arfassa was surprised by how flowers, tomatoes and peppers are produced in greenhouses using artificial light with efficient utilization of resources. This situation is impossible to compare with what we face at home. Fertilizer and water application, flower cutting, grading and packing are all mechanized and controlled by computers. Currently, the Netherlands is one of the best known countries which exports food and flower products. This appears to Arfassa not without reason. One of the respected cultures of the Dutch he experienced was efficient time utilization, hard work, full commitment and innovative thinking; all principles which help in development and advancement. Every activity appears to go smoothly within restricted systems exactly on time. He experienced what Bean and Radford call “a system which is a collection of related elements in performance to achieve a desired result”. In the flower auction everything is done by machine and in a computerized way. Whereas in Ethiopia, the majority of agricultural activities are done by human labour and are therefore labour intensive. In the Netherlands, only a few trained individuals are required for huge jobs. He raises a simple example: in the Netherlands, most of the activities are accomplished by one or a few people. Hello Ethiopians! How and when can we apply that?

As a concluding remark, the new skills and insights acquired during the course on ‘Market access for sustainable development’ and our visit to the Netherlands will hopefully enable our project to discern between appropriate strategies that are relevant to local seed business development and predicaments which hinder the smooth flow of local seed business in our project areas. Therefore, we aim to improve the strategic plans to achieve the objective of promoting local seed business. The issues covered during the course are highly relevant and appeal to the improvement of Local Seed Business in Ethiopia.

Nugus Kassa and Arfassa Kiros are agribusiness experts within LSB units from Mekelle University and Oromia Seed, respectively.
Training opportunities Wageningen UR CDI

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<td>Facilitating multi-stakeholder processes and social learning</td>
<td>5 – 23 September 2011</td>
<td>The Netherlands</td>
<td>1 February 2011</td>
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<tr>
<td>Plant genetic resources and seeds: Policies, conservation and use</td>
<td>31 October – 18 November 2011</td>
<td>India</td>
<td>1 May 2011</td>
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<tr>
<td>Market access for sustainable development</td>
<td>31 October – 18 November 2011</td>
<td>The Netherlands</td>
<td>1 May 2011</td>
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<tr>
<td>Transition to sustainable crop and livestock systems</td>
<td>21 November – 2 December 2011</td>
<td>The Philippines</td>
<td>1 May 2011</td>
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For the complete course overview and application on-line visit the website:
http://www.cdi.wur.nl/UK/services/Courses/overviewcourses2011/

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